

REMARKS

This Reply is responsive to the non-final Office Action¹ of July 26, 2007. Claims 1-42 were presented for examination and, except for claim 16, were rejected. Claim 16 is objected to as being dependent upon a rejected base claim but, according to the Office Action, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 1, 18, 25, 31, 37 and 42 are in independent form and all are amended to include the limitations of claim 16. Claim 16 is canceled without prejudice or disclaimer. Claims 1-15 and 17-42 are pending.

Claims 1-8, 12-14, 17-20, 22, 23, 25-29, 31-35 and 42 are rejected under 35 U.S.C. §102(e) as being anticipated by Azuma et al., (U.S. Patent No. 7,035,411, referred to hereinafter as "Azuma"). Claims 9-11, 21 and 37-40 are rejected under 35 U.S.C. §103(a) as being un-patentable over Azuma in view of Lutkenhaus, U.S. Patent Application Publication No. 20040151321 (hereinafter "Lutkenhaus"). Claims 15, 24, 30 and 36 are rejected under 35 U.S.C. §103(a) as being un-patentable over Azuma in view of Newcombe et al., U.S. Patent No. 7,243,226 (hereinafter "Newcombe"). Applicant respectfully traverses these rejections for the following reasons.

1 The Office Action may contain a number of statements characterizing the cited references and/or the claims which Applicant may not expressly identify herein. Regardless of whether or not any such statement is identified herein, Applicant does not automatically subscribe to, or acquiesce in, any such statement. Further, silence with regard to rejection of a dependent claim, when such claim depends, directly or indirectly, from an independent claim which Applicant deems allowable for reasons provided herein, is not acquiescence to such rejection of that dependent claim, but is recognition by Applicant that such previously lodged rejection is moot based on remarks and/or amendments presented herein relative to that independent claim.

The Office Action, pg. 13, advises that claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 16, now canceled, had recited: "The method of claim 1, further comprising: calculating a message authentication code based on a block of text; and deriving the first and second bit sequences from the message authentication code." Claim 1 has been amended to include the limitations of claim 16, wherefore claim 1 is allowable.

Each of the other independent claims has been amended to include the same limitation as, or a similar limitation to, that of claim 16:

Claim 18 recites, *inter alia*: "calculating a message authentication code based on a block of text; deriving first and second bit sequences from the message authentication code."

Claim 25 recites, *inter alia*: "wherein the first and second bit sequences are derived from a calculated message authentication code, the calculation based on a block of text."

Claim 31 recites, *inter alia*: "wherein the first and second bit sequences are derived from a calculated message authentication code, the calculation based on a block of text."

Claim 37 recites, *inter alia*: "wherein the first and second bit sequences are derived from a calculated message authentication code, the calculation based on a block of text."

Claim 42 recites, *inter alia*: "means for calculating a message authentication code based on a block of text; means for deriving first and second bit sequences from the message authentication code."

Accordingly, since each one of independent claims 18, 25, 31, 37 and 42 recites subject matter indicated by the Office Action to be allowable, these claims are also allowable.

All dependent claims are allowable at least for reasons based on their respective dependencies from allowable base claims.

In addition, dependent claims are allowable for independent reasons. For example, claim 12 recites:

The method of claim 1, wherein authenticating the optical channel includes:

tabulating the number of bits from the first bit sequence that are correctly received;

tabulating the number of bits from the first bit sequence that are incorrectly received; and

authenticating the optical channel when the tabulated number of correctly received bits expressed as a fraction of a total number of correctly and incorrectly received bits is greater than a threshold value.

The Office Action, pg. 4, applies Azuma, col. 27, line 19 through column 28, line 24 against claim 12. However, this section of Azuma does not disclose or suggest the recited limitations of claim 12. This section of Azuma merely discusses a "photon-counting measurement" to examine "whether each qubit is really received on the other side by the recipient." (col. 27, lines 20-23). The section concludes: "he [Bob] can examine whether all photons have arrived." (col. 28, lines 23-24)

The act of determining if all photons have arrived, or merely counting photons, does not read on "authenticating the optical channel when the tabulated number of correctly received bits expressed as a fraction of a total number of correctly and incorrectly received bits is greater than a threshold value" as recited in claim 12. First of all, such a threshold value is not established in this section in Azuma from merely counting photons, nor is it disclosed elsewhere in Azuma. Furthermore, the recited fraction is not calculated in this section in Azuma from merely counting photons, nor is it disclosed elsewhere in Azuma. Accordingly, claim 12, rejected as being allegedly anticipated by Azuma, is independently allowable for these additional reasons.

As this example shows, the alleged reading of Azuma on elements of Applicant's pending claims is subject to rebuttal. Accordingly, Applicant advises that it does not necessarily acquiesce in the rejections presented in the Office Action, but has accepted the allowable subject matter identified in the Office Action for purposes of advancing the prosecution of this application. Applicant hereby expressly reserves its rights to file continuing applications during pendency of the instant application to seek additional/other patent protection if it decides to do so.

CONCLUSION

Reconsideration and allowance are respectfully requested based on the above amendments and remarks. It is respectfully submitted that all claims and, therefore, this application are in condition for allowance.

If there are any remaining issues or if the Examiner believes that a telephone conversation with Applicant's attorney would be helpful in expediting the prosecution of this application, the Examiner is invited to call the undersigned at the number provided below.

To the extent necessary, a petition for extension of time under 37 C.F.R. § 1.136 is hereby made, the fee for which should be charged to deposit account number 07-2347. Please charge any other fees due, or credit any overpayment made to that account.

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Respectfully submitted,



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